

## **ACTION PLAN - 2001 UPDATE**

### **'REBUILD HAWAII ISLAND'**

#### **Introduction**

The County of Hawaii is a partner in the national 'Rebuild America' program consisting of thousands of people working to improve energy efficiency in buildings across the country. The following is an update of the 1997 Action Plan for the 'Rebuild Hawaii Island' aimed at implementing energy efficiency measures throughout the Big Island.

#### **The Partnership, Its Priorities and Goals**

##### **A. Organizations involved in the Rebuild Hawaii Island program are as follows:**

County of Hawaii	The lead partner in the Rebuild Hawaii Island program with a plan to upgrade the efficiency of energy use in its island-wide buildings and other facilities by a target 25% by year 2006. The administration of the County of Hawaii under its new Mayor, Harry Kim, continues to be very supportive of this energy efficiency program.
Hawaii Electric Light Company, Inc. (HELCO)	This electric utility serves the island of Hawaii and presently has in place aggressive Demand Side Management programs for the Residential and Commercial & Industrial sectors. The president of HELCO, Mr. Warren Lee, is also supportive of participation in the Rebuild Hawaii Island program.
Hawaii State	A number of state entities with facilities on Hawaii island are partners in the Rebuild America program including University of Hawaii at Hilo, the Community College system, Hawaii Army National Guard, State Judiciary and the State Library system.
Private Sector	Individual partners have not yet been identified.

##### **B. Partnership priorities are as follows:**

- Economic Stimulation: By minimizing the amount spent on high utility costs (island electricity rates are in the range 16 - 21 cents/kWh), government is able to use its revenues more effectively and private businesses become better able to compete in national and international arenas. In addition, retrofit projects directly impact the local economy by providing quality jobs.
- Approximately 70% Hawaii Island's electricity is generated from imported fossil fuels. Energy efficiency measures reduce the outflow of local money for these imports and increase the fraction of generation from indigenous resources such as geothermal, run-of-river hydro and windpower.
- Environmental protection is of paramount importance to Hawaii and its visitor industry. Efficient use of energy reduces the damaging impacts associated with power generation.

##### **C. Goals**

The main goal of the Rebuild Hawaii Island program is for the County of Hawaii to reduce energy consumption in its inventory of buildings by 25% of 1996-97 usage by

year 2006. This corresponds to annual energy savings of 2,350,000 kWh and energy cost savings of \$475,000 at current utility rates.

### **Candidate Buildings**

The County of Hawaii owns and operates about 200 buildings with an estimated total floor area of 500,000 square feet. The combined annual electricity costs for these facilities is over \$2,000,000. Consumption in these buildings range from the largest at 2,500,000 kWh/year (costing \$450,000/year) to small pavilions and park facilities with minimal consumptions.

In March 1997, the Hawaii County Building, with a total floor area of 68,000 square feet, was retrofitted through a performance contract financed by a tax-exempt municipal lease. 360,000 kWh per year of energy savings were realized - 30% of the pre-retrofit electricity consumption. The favorable experience with this demonstration project provided the impetus for proceeding with a master performance contract for retrofitting the remaining inventory of County owned buildings.

In February 2000, lighting retrofits were completed by Honeywell Inc. to 27 Fire and Police sub-stations around the Big Island with an aggregate floor area of 101,000 square feet. This project cost \$402,600 financed through a municipal lease at an interest rate of 5.29%. Retrofit savings are 331,986 kWh valued at \$56,019.

In December 2000, retrofits were started for the Hilo Public Safety Building and the main Kona Police Station with a combined floor area of 102,000 square feet. Scheduled for completion in June 2001, these retrofits will cost \$1,370,000 and are projected to result in annual energy cost savings of \$140,000.

Plans for further upgrades to the energy systems of County-owned buildings call for completion of retrofits to the remaining inventory of smaller facilities with 230,000 square feet of floor area by the end of calendar year 2002.

### **Other candidate facilities**

It is also planned to include energy efficiency retrofits to facilities of the Hawaii County Department of Water Supply (DWS) under the umbrella of the Rebuild Hawaii Island Action Plan. The DWS is the largest single user of electricity on the Big Island of Hawaii with an annual energy bill close to \$8,000,000.

In May 2001, a consultant to DWS, Steve Bolles of Process Energy Services in New Hampshire, developed a comprehensive Energy Program Report for District 1 of DWS pump systems. Potential savings were identified and valued at \$1,116,000, reducing present consumption by 63%. While any decision to proceed with retrofits to these facilities will rest with DWS management, a tentative plan for implementation calls for issue of an RFP and selection of an ESCO by December 2001. Target date for the installation of retrofit measures to District 1 systems would then be December 2002. Success with this project is expected to lead to retrofits to all other DWS district systems by June 2006.

### **3. Private Sector Upgrades**

No private sector participants, other than those already identified currently exist. It will be an on-going part of the Rebuild Hawaii Island to attract partners from the private sector. The action plan will be modified as needed to incorporate these partners as they join in the program.

## **Resources, Financing and Responsibilities**

### **1. Staff Resources and Technical Expertise**

In proceeding with the performance contract for county buildings, the Energy Coordinator of Hawaii County will assume the lead role. Further expertise that could be provided by other partners in Rebuild America to the County includes technical assistance in the areas of Monitoring & Verification, Indoor Air Quality and Moisture Issues and Office Equipment energy use as follows.

- Training in the measurement, verification and long term tracking of post-retrofit energy savings especially for DWS pumping facilities.
- Technical advice in relation to indoor air quality issues that may arise as retrofits are planned and implemented. Also minimizing the escalating energy demands of office equipment as computers and allied office systems are increasingly utilized.

### **2. Financing**

Performance contracting will be the main method for implementing the proposed efficiency measures, and project financing will likely be provided by a third party finance company and municipal lease. Utility DSM incentive payments will be applied for as projects are completed and these incentives will be used as credits against on-going electricity costs.

### **3. Responsibilities**

#### **3.a. County of Hawaii.**

Will continue to play a lead role in implementing the Rebuild Hawaii Island program by implementing its own energy efficiency program, coordinating and assisting in the implementation of other programs, providing technical and project management advice to others as required and promoting the Rebuild Hawaii Island initiative throughout the Big Island.

#### **3.b. Hawaii Electric Light Company, Inc..**

HELCO staff will contribute through the on-going implementation of the utility's Residential and Commercial & Industrial DSM programs. HELCO's well qualified staff not only process utility incentive payments but also provide technical support to those contemplating efficiency retrofits. HELCO also is heavily involved in the promotion of energy efficiency measures.

#### **3.c. Hawaii State**

The State of Hawaii will be an important source of technical and management advice mainly through staff of DBEDT's Energy, Resources and Technology Division. The State's energy efficiency programs in the University, Community Colleges, Army National Guard, Judiciary and Library systems on the island of Hawaii will complement the County's activities. Sustained promotion of these initiatives will further enhance participation by other public and private entities.

## **Monitoring and Evaluating Results**

Since the County's main program will be achieved through performance contracting, there are regular energy and cost avoidance reports provided by the ESCO subsequent to the retrofits. These reports will be used to provide program results on an annual basis to the Executive Committee of the U.S. Department of Energy. For other projects implemented under the Rebuild program, the Energy Coordinator of Hawaii County plans to maintain historical and current energy use data using energy tracking software where feasible and to provide program results to US DOE.

## **Promoting the Program**

It is intended to base much of the promotion of the Rebuild Hawaii Island upon the methods currently used by the Hawaii Electric Light Company. HELCO has already implemented a sustained promotional program wherein the recipients of DSM incentive payments are photographed receiving the payment. The photos and write-ups are placed in the local newspapers. Participation in these awards and promotions by the County and other partners in Rebuild Hawaii Island will complement existing utility promotions. Other promotions will include radio and television interviews as projects proceed.

In addition, staff of the County Department of Research and Development maintain close communications with various chambers of commerce, economic development boards and community and environmental organizations and through these channels is able to effectively disseminate information about the benefits of, and mechanisms for, implementing energy efficiency measures.

Workshops are planned for the future to focus on potential Rebuild partners from public and private concerns. Information will be provided on the benefits of carrying out energy efficiency retrofits based on actual experience with projects on the Big Island. Available technologies and methods for financing and implementing energy retrofit projects will also be workshop topics.

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